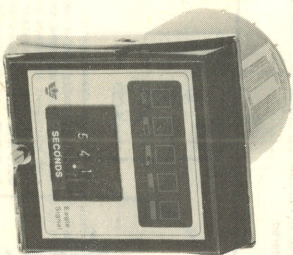


TIME CONTROL



CD300 SERIES SOLID-STATE TIMER



The CD300 is a solid-state Reset Timer housed in a standard Cyc-Flex® case. The timer uses CMOS integrated circuits for the timing function. The timer is set by three digital thumbwheel switches on the front of the unit. Five neon annunciators on the front of the unit indicate when the unit is timing, and the timing cycle progress in increments of 25%, 50%, 75% and 100% (timed out).

The CD300 can be configured into any one of three time ranges by way of a program wire located inside the unit. The program wire is located on the printed circuit board and easily accessible when the unit is removed from the case. The function of the CD300 is similar to other Eagle Signal timers such as the HP5 and CT530/531 series. An optional reverse start feature is also available.

Output sequences are controlled by two electromechanical relays. One relay energizes when the timer starts the timing cycle, the other relay energizes when the timer completes the timing cycle. These instantaneous and delayed relay contacts may be interconnected to supply the useable timing output sequences shown elsewhere in this bulletin.

The CD300 Timer can be easily changed from the standard start mode to reverse start mode.

OPERATION

The timing circuit is controlled by an internal oscillator. The oscillator output is directed to designated frequency dividers through a programming wire, providing the selection of one of three time ranges.

A simulated clutch relay (CR1) is energized when power is applied to the control input. For standard start units, timing starts when the clutch relay is energized. For reverse start units, the timer is reset when the clutch relay is energized and timing starts when the input to the relay is removed.

A delay relay (CR2) is energized when the timing cycle is complete. The operation of the delay relay is identical in both standard start and reverse start units.

SPECIFICATIONS

Time Ranges

Catalog Symbol	Maximum Range	Minimum Setting
01	99.9 Sec.	.1 Sec.
02	999 Sec.	.1 Sec.
03	999.9 Min.	.1 Min.
04	999.9 Min.	1.0 min.

Repeatability (Constant Voltage & Temperature)
± .1% of setting or 35 ms (whichever is larger)

Repeatability (Voltage & Temperature Variation)
Variable Voltage ± 1% of setting or 35 ms

Variable Temperature ± 2% of setting or 35 ms

Variable Voltage and Temperature ± 3% or 35 ms

Reset Time

100 ms

Cycle Progress

Cycle ON annunciator with time progression annunciators indicating elapsed time percentages of 25%, 50%, 75% and 100% (cycle complete)

Voltage/Frequency

120 VAC, 50/60 Hz

240 VAC, 50/60 Hz

Burden

Reset	Timing	Timed-Out
120 VAC	8 VA Max.	4.0 VA Max.
240 VAC	1.6 VA Max.	7.3 VA Max.
	4.8 VA Max.	8.0 VA Max.

Output Rating

Relay - 10 amp steady state at 120 VAC, 60 Hz
Mechanical Lifetime - Over 20 million operations

Electrical Lifetime - Contingent on load characteristics

Power Interruption

Line voltage interruptions of 16 ms or less will not reset unit

Power On Response

40 ms Max. after application of line voltage to pins 1 and 2

Operating Temperature

0° - 60° C (+32° - +140°F)

Transient Voltage Immunity

Unaffected by 50 us, 600 V peak transients superimposed on line input

Vibration

Unaffected by 2.5G sinusoidal vibration magnitudes in both directions of three perpendicular mounting axes imposed from 10 to 1000 Hz

Laboratory Testing

U.L. Recognition E-44416

C.S.A. Certification LR-26861

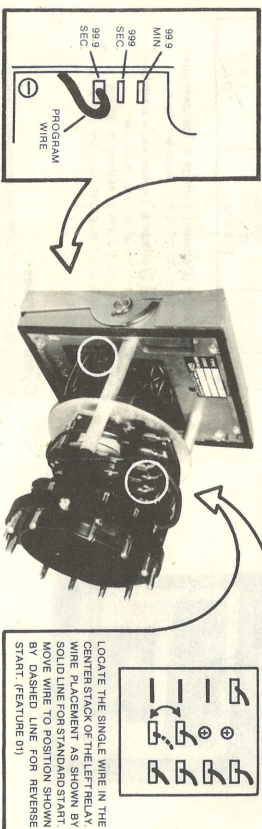
EW Eagle Signal Controls
a division of Gulf Western Manufacturing Co.
736 Federal Street, Davenport, Iowa 52803

TIME CONTROL



TIME RANGE PROGRAMMING

To determine the full scale time range of a CD300 Reset Timer, or to change the time range, view the unit as shown in the photograph and refer to the companion line drawing for proper placement of the program wires. The CD304 has an added decade switch, increasing the range by one most significant figure. Time ranges are 999.9 seconds, 9999 seconds, and 999.9 minutes, retaining the least significant digit. After programming, install decimal and time range decals on front panel.



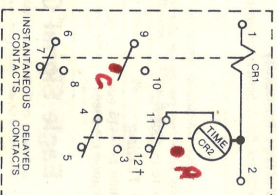
FIELD CONVERSION TO "01" FEATURE

The CD300 start characteristics are determined by the relative placement of a single wire on the instantaneous relay contact stack. To change the start feature, view the unit as shown in the photograph and refer to the companion line drawing. Reversing the start mode of operation is simply a matter of relocating the wire on the connectors. CAUTION: The product label should always be marked to indicate the proper start mode when the start mode is altered.

OUTPUT SEQUENCE REFERENCE CHART

Six usable output load sequences are available and obtained by properly interwiring the instantaneous and/or delay relay contacts. These six sequences are shown in the accompanying chart for ready reference. For each point in the operating cycle, an "X" denotes an energized load; an "O" represents a de-energized load. The three designators, reading from left to right, determine RESET condition, TIMING condition and TIMED OUT condition in that sequence. Example: XXO load sequence indicates that the output contacts are closed during RESET, closed during the TIMING period and the contacts open when the unit is TIMED OUT. The chart may be used as a guide when designing a specific output sequence for a particular application.

CD300 TERMINAL ASSIGNMENTS



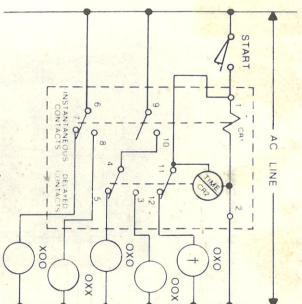
SEQUENCE	STANDARD START	REVERSE START
0 0 X DELAY CONTACT		
X X 0 DELAY CONTACT		
0 X 0 INSTANTANEOUS DELAY CONTACT		
X 0 X INSTANTANEOUS DELAY CONTACT		
0 X X INSTANTANEOUS CONTACT		
X 0 0 INSTANTANEOUS CONTACT		

NORMALLY OPEN CONTACT NORMALLY CLOSED CONTACT OUTPUT LOAD

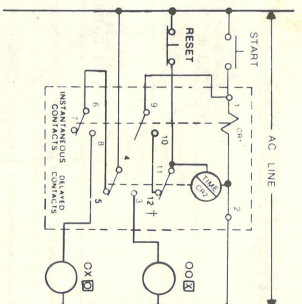
TIME CONTROL



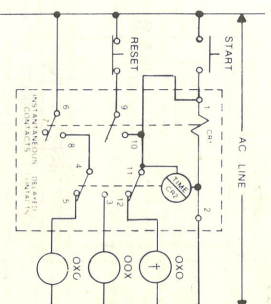
CD300 WIRING DIAGRAMS



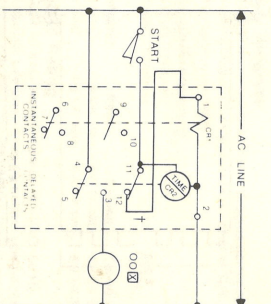
Sustained Control Switch - close to start, open to reset. Selected outputs are shown in this wiring diagram. Consult the chart on the previous page for the configuration of all possible output sequences.



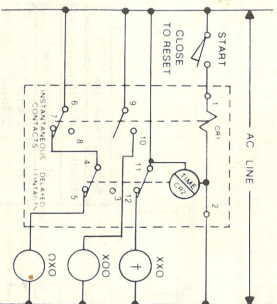
Momentary Control Switch - close to start, automatic reset. After timing, the normally open delay contacts close for approximately 50ms, indicated by □ in the wiring diagram. Reset switch is optional for reset during timing.



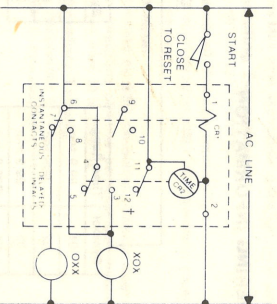
Momentary Control Switch - close to start, manual reset. Depress control switch to start timing. Timer resets when reset switch is actuated.



Sustained Control Switch - Repeat Cycle Wiring. Approximately 50ms pulse output at the end of each timing period. Close control switch to start timing cycle. Timer resets when control switch is opened.



"01" FEATURE - Reverse Start. Close control switch to reset, open to start timing. Consult chart on previous page for "01" feature conversion information. Contacts shown during timing.



"01" FEATURE - Reverse Start. Additional load circuits are shown in this figure. Close control switch to reset, open to start timing. Consult chart on previous page for "01" feature conversion information. Contacts shown during timing.

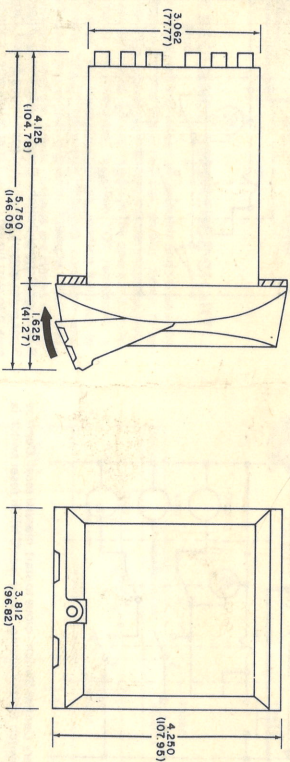
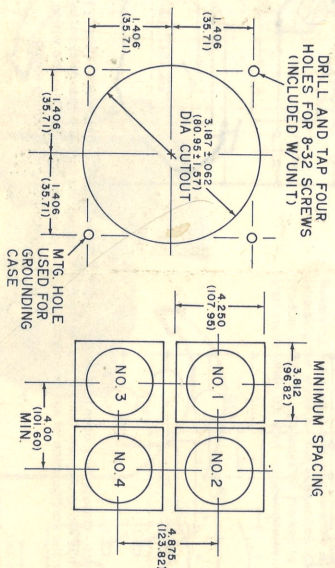
† Terminal 12 is useable only on 120 Volt.



TIME CONTROL



MOUNTING DIMENSIONS



ORDERING INFORMATION

ELECTRONIC TIMER

CD3

02

A6

01

Symbol	Time Range
01	99.9 sec.
02	999 sec.
03	99.9 min.

Symbol	Voltage/Frequency
A6	120 VAC 50/60 Hz.
B6	240 VAC 50/60 Hz.

Symbol	Features
Blank	Standard
01	Reverse Start